



# Concrete Crusher Deployment

## Accelerated Site Technology Deployment Integrated Decontamination and Decommissioning Project



### Need

The U.S. Department of Energy (DOE) is in the process of decontaminating and decommissioning a number of facilities. This process often involves demolition of large buildings with several basements, leaving holes that must be filled and concrete rubble that must be cleaned up. DOE has become concerned with waste minimization and reutilization of materials.

### Technology Description

Concrete recycling addresses both of these needs. Concrete from a demolished building can be crushed on site and used to fill in holes. This eliminates the need to haul in gravel and to haul away concrete rubble. Excel Recycling and Manufacturing, of Amarillo, Texas, has developed a concrete crushing system that is well suited for this recycling work. The Excel 2522 Low-Pro Concrete Crusher is a 51-foot portable plant, including conveyors, feeder, crusher, screen, engine, chassis, and trailer. A semi-tractor hauls it to a Decontamination and Decommissioning site, and two or three people set it up in two days.



Operating the system requires one worker to dump large pieces of concrete—including reinforcing steel—into the crusher, where they are thrown against blow bars and rubblized, and one or two workers to control the crushing system. Conveyors move the crushed concrete from the machine into two piles, depending on size. One pile contains pieces with diameters smaller than 1 inch, and the other holds chunks between 1 and 2 inches in diameter. A powerful electromagnet separates rebar from the rubble and conveys it to a separate pile.

### Benefits

Since dump trucks are no longer needed to run back and forth between the demolition site, gravel pits, and landfill, fuel and driver costs are virtually eliminated. Concrete recycling also extends the life of the landfill by reducing the amount of waste disposed of. In addition, it produces useful products. The 1-inch pieces of concrete function as gravel, while the 1- to 2-inch pieces serve as railroad ballast.

### Status

The Idaho National Engineering and Environmental Laboratory (INEEL) Decontamination and Decommissioning Operations Department purchased a concrete crusher that workers will deploy through the Accelerated Site Technology Deployment Project in October of 1999 at the INEEL's Security Training Facility to document its performance and cost benefits. Based on the volume of concrete to be crushed, cost savings are expected to be on the order of one hundred thousand dollars.

### Contacts

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